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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,117	02/28/2002	Zdravko Menjak	FC-101.5	3612
24963	7590	04/12/2004	EXAMINER	
ENERGY CONVERSION DEVICES, INC.			CANTELMO, GREGG	
2956 WATERVIEW DRIVE			ART UNIT	
ROCHESTER HILLS, MI 48309			PAPER NUMBER	

1745

DATE MAILED: 04/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,117

Applicant(s)

MENJAK ET AL.

Examiner

Gregg Cantelmo

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,8,9,11-36,38-69 and 71 is/are allowed.
- 6) ☒ Claim(s) 2-7,70 and 72-79 is/are rejected.
- 7) ☒ Claim(s) 10,37 and 72 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. No IDS appears to have been filed with the application prior to this office action.
2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. See, page 2, line 16 and page 11, line 14 as examples of listings of references in the specification.

Drawings

3. The drawings received February 28, 2002 are acceptable for examination purposes.

Specification

4. The disclosure is objected to because of the following informalities:
 - a. There is no known copending application serial number 90/737,332 as recited on page 38, line 16.
 - b. The incorporation by reference on page 40, lines 18-21 is indefinite since it fails to provide any application serial number.

Appropriate correction is required, however any corrections cannot enter new matter to the original disclosure.

Claim Objections

2. Claims 10, 37 and 72 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

a. As to claims 10 and 37: Claim 10 recites that the hydrogen electrode pair comprises first and second hydrogen electrodes and claim 37 recites that the oxygen electrode pair comprises first and second hydrogen electrodes. It should be noted that claim 1 explicitly recites both a hydrogen electrode *pair* and an oxygen electrode *pair*. The plain meaning of each electrode pair is a teaching of two hydrogen electrodes and two oxygen electrodes. Thus claim 1 inherently has first and second hydrogen electrodes and first and second oxygen electrodes. With that, claims 10 and 37 merely recite features already explicit in claim 1 and fail to further limit;

b. As to claim 72. Claim 72 recites that the fuel cell is adapted to operate at ambient pressures. This is an intended use for the fuel cell of claim 1 and claim 72 fails to provide further structure to the fuel cell of claim 1.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-7, 70 and 73-79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 2-7 are not clear with respect to the limitations of base claim 1.

Claim 1 recites that the electrolyte is provided in an uninterrupted pathway.

Subsequent claims 2-7 recite that the electrolyte chamber comprises a porous support. The porous support while having flow channels therein to permit the flow of electrolyte also has portions defining the channels which would interrupt the pathway of the electrolyte solution. The exact nature of the pathway as set forth in claims 2-7 is unclear since the presence of the porous support structure would appear to provide an interrupted pathway for the electrolyte solution to flow;

b. The scope of claim 70 is unclear. Claim 1 recites that the stream is an oxygen stream. Latter claim 70 recites that the oxygen "comprises air". It is not understood how oxygen which consists of only one element, can comprise air which is a mixture of multiple elements. Applicant is advised to amend claim 1 to recite that the oxygen is a "source of oxygen" and to amend claim 70 to recite wherein "said source of oxygen comprises air", to potentially overcome this rejection;

c. Claim 73 recites the limitation "said electrolyte chambers" in line 2. There is insufficient antecedent basis for this limitation in the claim. There is no clear

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recitation of plural electrolyte chambers in either claim 1 or claim 73 prior to the recitation in line 2. Thus the claim lacks sufficient antecedent basis for the term.

This similarly applies to the term "said compression plates" in claim 76;

d. Claim 75 is unclear. It is not understood how the electrolyte chambers can be disposed between the electrolyte chambers as recited in claim 75. This language renders the arrangement of claim 75 indeterminable. As such the Examiner cannot reasonably apply any prior art to claim 75 without clarification by Applicant. In addition, all claims dependent upon claim 75 cannot have any prior art reasonably applied thereto.

Allowable Subject Matter

5. Claims 1, 8-9, 11-36, 38-69 and 71 are allowed.

6. The following is an examiner's statement of reasons for allowance: none of the prior art of record is considered to teach, suggest or render obvious the invention of claim 1.

Claim 1 recites providing at least one hydrogen electrode pair in contact with a hydrogen stream and at least one oxygen electrode pair in contact with an oxygen stream, an electrolyte chamber providing mechanical support within the fuel cell and providing an uninterrupted path for an electrolyte solution to contact the electrode pairs and at least one compression plate.

USPAT 4,247,324 (de Nora) discloses a fuel cell stack having a hydrogen electrode pair and an oxygen electrode but fails to teach or suggest of the electrolyte

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chamber providing the mechanical support within the fuel cell or of a compression plate. In the de Nora reference the electrolyte chamber is defined by the receptacle which houses all of the electrodes and electrolyte (Fig. 5) and one of ordinary skill in the art would not have found it obvious to provide the electrolyte chamber and functionality as recited in claim 1. Further the electrodes are disposed in grooves in the housing as shown in Fig. 3 as shown in Fig. 5. Due to the static placement of the electrodes in the fuel cell of de Nora, there is no suggestion for providing compression plates since the elements of the fuel cell are already disposed in a static arrangement and compression plates would not serve any benefit to the arrangement of de Nora.

USPAT 5,902,691 (Matzkin-Bridger) disclose a fuel cell stack having a hydrogen electrode pair and oxygen electrode pair with an electrolyte providing mechanical support within the fuel cell but does not teach or suggest of the compression plate or of the electrolyte chamber providing a pathway for electrolytic solution in the electrolyte chamber to contact the both the hydrogen electrode *pair* and oxygen electrode *pair*.

This language requires that each electrode in the hydrogen electrode pair and oxygen electrode pair be in ionic contact with the respective electrolyte chamber recited in claim 1.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPATs 4,246,324 and 5,902,691 are cited for reasons discussed above.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo
Primary Examiner
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gc



April 3, 2004